



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,963	02/15/2002	William Bares	9259-2	1465

20792 7590 04/17/2006

MYERS BIGEL SIBLEY & SAJOVEC
PO BOX 37428
RALEIGH, NC 27627

EXAMINER

PIERRE, MYRIAM

ART UNIT PAPER NUMBER

2626

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/076,963	Applicant(s) BARES ET AL.	
	Examiner Myriam Pierre	Art Unit 2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the office action from 11/03/2005, the applicant has submitted an amendment, filed 02/06/2006. The proposed changes are accepted by the examiner, amended claims 1, 17, 39, and 61.

Response to Arguments

1. Applicant's arguments filed 02/06/2006 have been fully considered but they are not persuasive.

Applicant argues that Gorin et al. (6,751,591) do not disclose or suggest a knowledge base that is populated with information based on one exemplary conversations involving an exchange of utterances. Examiner respectfully disagrees. Gorin et al. teach a dialog exchange stored in a database, col. 1 line 45-58. Gorin et al. disclose or suggest a knowledge base that is populated with information based on one exemplary conversations involving an exchange of utterances.

Applicant argues that Gorin et al. do not use the conversations stored in the dialog history database. Examiner respectfully disagree. Gorin et al. teach dialog exchange and storage of dialog in a database, thus the history is stored, col. 1 lines 45-58. Gorin et al. do use the conversations stored in the dialog history database.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2626

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 8-12, 14, 16, 23-28, 30-34, 36, 38, 45-50, and 58, 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fratkina et al. (US patent appl. Pub. 2001/004968) in view of Gorin (6,751,591).

As per claim 1, 23, and 45, Fratkina et al. teach a method of responding to a customer (para 0007) communication comprising:

- receiving an utterance (asking only questions, para 0013) from the customer at an agent executing on a data processing system (para 0014, dialog/intelligent/personal agent, “knowbot” or “droid”, which is a search tool that automatically seeks out relevant online information based on a user’s specification).

- generating a response to the utterance received from the customer at the agent based on a knowledge base (knowledge base, para 0012)

- sending the response from the agent to the customer (automated system is delivered using an interactive voice response, para 0015)

Fratkina et al. do not teach a knowledge base that comprises at least one exemplary conversation comprises an exchange of utterances.

However, Gorin et al. do teach a knowledge base that comprises at least one exemplary conversation comprises an exchange of utterances (col. 4 lines 3-18).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have Fratkina’s knowledge base store a number of exemplary conversations like in Gorin et al., because Gorin et al. teach that this would increase understanding of the user’s request by the computer can be facilitated, col. 2 lines 31-34.

Art Unit: 2626

As to claims 2, 24, and 46, which depend on claims 1, 23 and 45, Fratkina et al. teach generating the response to the utterance received from the customer (para 0099-0101) comprising;

- analyzing the utterance received from the customer based on at least one of the following:

- at least one prior utterance received from the customer (para 0097, “How do I install Windows?”).

As to claims 3, 25, and 47, which depend on claims 1, 23, and 45, Fratkina et al. teach a method where:

- at least one prior utterance received from the customer (para 0095, “I am getting an error when installing the software”) and at least one prior response sent from the agent to the customer (para 0095, PQ: 1245) provide a contextual framework (para 0095, auto-contextualization, for analyzing the utterance received from the customer).

As to claims 4, 26, and 48, which depend on claims 1, 23, and 45, Fratkina et al. teach a method comprising:

- maintaining a conversation model having a current state (initial session state, para 0091, and iteration N+1, Fig. 11) that is representative of the at least one prior utterance received from the customer (Fig. 11 element 1110, iteration N) and at least one prior response from the agent to the customer (“which of the following would you like to get”, Fig. 11 element 1110)

Art Unit: 2626

- updating the current state (changes in the session state, para 0095 and Fig. 11 iteration N+2) of the conversation model based on the utterance received from the customer (Fig. 11 element 1120) and the response sent from the agent to the customer (Fig. 11 element 1120).

As to claims 5, 27, and 49, which depend on claims 2, 24, and 46, Fratkina et al. teach a method where analyzing the utterance received from the customer comprises a plurality of data strings (Fig. 19), and wherein recognizing the part of the utterance received from the customer comprises at least one of the following:

- recognizing one of the plurality of data strings (Fig. 19) based on the knowledge base (Fig. 3 element 234) that comprises the information extracted from the at least one exemplary conversation (history of the traversal and generating constraints and preferences, para 03111).

As to claims 6, 28, and 50, which depend on claims 5, 27, and 49, Fratkina et al. wherein the utterance received from the customer comprises a plurality of data strings, and wherein recognizing the part of the utterance received from the customer comprises at least one of the following:

recognizing a sub-combination on the plurality of data strings based on the knowledge base that comprises the information extracted from at least one exemplary conversation (para 03111);

Art Unit: 2626

recognizing one of the plurality of data strings based on the knowledge base that comprises the information extracted from the at least exemplary conversation (para 03110-03111).

As to claim 8, 30, and 52, which depend on claims 5, 27, and 49, Fratkina et al. teach:

- a method wherein recognizing the part of the utterance received from the customer (keywords, para 0069)
- associating the utterance received from the customer with an information type (taxonomic relationship, para 0272) that corresponds to at least:
 - one of a predefined information arrangement (meta data constraint, para 0273, ie list of authors); and
 - a predefined information meaning ("semantic" terms and concept-based logging, para 0321).

As to claims 9, 31, and 53, which depend on claims 2, 24, and 46, Fratkina et al. teach

- sending the utterance received from the customer and the response sent from the agent to the customer to a customer service representative (CSR) (para 0225).

As to claims 10, 32, and 54, which depend on claims 9, 31, and 54, Fratkina et al. teach a method comprising

Art Unit: 2626

wherein the at least one prior utterance received from the customer and the at least one prior response sent from the agent to the customer provide a contextual framework for analyzing the utterance received from the customer, the method further comprising:

- maintaining a conversation model having a current state (initial session state, para 0091, and iteration N+1, Fig. 11) that is representative of the at least one prior utterance received from the customer (Fig. 11 element 1110, iteration N) and at least one prior response from the agent to the customer (“which of the following would you like to get”, Fig. 11 element 1110)

- updating the current state (changes in the session state, para 0095 and Fig. 11 iteration N+2) of the conversation model based on the utterance received from the customer (Fig. 11 element 1120) and the response sent from the agent to the customer (Fig. 11 element 1120).

As to claims 11, 33, and 55, which depend on claims 1, 23, and 54, Fratkina et al. teach a method wherein generating the response to the utterance received from the customer comprises:

- receiving a notification from a CSR of intent to communicate with the customer (para 0225, a human CSR can call the user, where the call itself is interpreted as the notification to communicate with the customer).

As to claims 12, 34, and 56, which depend on claims 11, 33, and 55 Fratkina et al. teach a method wherein generating the response to the utterance received from the customer (para 0059) comprises

Art Unit: 2626

generating at least one response to the utterance received from the customer at the agent (dialog engine, para 0181, and knowledge map, Fig. 3 element 234) that comprises information extracted from the at least one exemplary conversation (history of the traversal, para 0311); and

wherein sending the response from the agent to the customer comprises:

sending the proposed response to the supervisor for approval if the proposed response is determined to be inappropriate (paras 0094-0095, 0102-0109 and 0225, then will talk to a CSR who has the information available about the dialog the user had with the dialog engine before escalation occurred).

sending the proposed response to the customer if the proposed response is determined to be appropriate (paras 0094-0095 and 0225).

As to claims 13, 35, and 57, which depend on claims 11, 33, and 55, Fratkina et al. teach

generating at least one response to the utterance received from the customer at the agent based on the knowledge base that comprises information extracted from at least one exemplary conversation (history of the traversal and generating constraints and preferences, para 0311); and wherein sending the response from the agent to the customer comprises:

sending the at least one response to the customer server representative (paras 0094-0095, 0311 and 0225);

Art Unit: 2626

receiving a selection of at least one response from the customer service representative at the agent (dialog engine, paras 0181 and 03111, and knowledge map, Fig. 3 element 234); and

sending the selected one of the at least one response from the agent to the customer (paras 0094-0095, 03111 and 0225).

As to claims 14, 36, and 58, which depend on claims 1, 23, and 45, Fratkina et al. teach

- recording the utterance received from the customer and the response sent from the agent to the customer in a conversation log (paras 0015, 0312 and 314, the logs can record any and/or all aspects of the dialog engine's interaction with users, responses to questions that involve entering text or other types of information is understood as voice)

As to claims 16, 38, and 60, which depend on claims 1, 23, and 45, Fratkina et al. teach a method wherein generating the response to the utterance received from the customer comprises:

- determining if the response to the utterance received from the customer can be generated at the agent based on the knowledge base (knowledge map, Fig. 3 element 234) that comprises information extracted from at least one exemplary conversation (para 0311, history of the traversal); and

- sending the utterance (information available about the dialog, para 0225) received from the customer to a CSR if the response cannot be generated at the agent based on the knowledge base (knowledge map, Fig. 3 element 234) that comprises

Art Unit: 2626

information extracted from the at least one exemplary conversation (...and the appropriate human service representative may be simply indicated as a parameter of the escalate action that is recorded by the dialog designers with a trigger...para 0226, the trigger in this instance of not having the particular goal resolved para 0205); and

generating the response to the utterance received from the customer at the CSR (allowing them to provide high-quality customer service, para 0025).

4. Claims 7, 15, 29, 37, 51 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fratkina et al. (2001/004968) in view of Gorin et al. (6,751,591), in further view of Copperman et al. (6,711,585).

As to claims 7, 29, and 51, which depend on claims 5, 27, and 49, Fratkina et al. in view of Gorin et al. do not explicitly teach predefined information meaning.

However, Copperman et al. do teach a method where recognizing the utterance received from the customer comprises associating the utterance received from the customer with an information type that corresponds to at least one of a predefined information arrangement and a predefined information meaning (col. 5 lines 1-17) that correspond to at least one of the predefined information arrangement (col. 5 lines 20-23) and a predefined information meaning (col. 5 lines 57-60 Table 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the dialogue analysis of Fratkina et al. in view of Gorin et al., into the predefined information meaning of Copperman et al., because Copperman et al. teach that this would provide information that can be found easily with the advantage of context and domain knowledge, col. 1 lines 64-65.

Art Unit: 2626

As to claims 15, 37, and 59, which depend on claims 14, 36, and 45, Fratkina et al. teach

editing the conversation log to correct, inherently reviewing the conversation log to determine if the agent sent an improper response to the customer (paras 0094-0095, 0102-0109, 0281 and 317, type of preferences generated from a goal is controlled by the dialog designer) the improper response if the agent sent the improper response to the customer (the success of the knowledge map and dialog control information within the dialog engine in leading users to documents and other types of resolution to their questions implies that the logs can be used to make whatever changes are necessary to reach a desired response next time)

Fratkina et al. in view of Gorin et al. do not explicitly teach predefined information meaning.

However, Copperman et al. do teach a method where recognizing the utterance received from the customer comprises associating the utterance received from the customer with an information type that corresponds to at least one of a predefined information arrangement and a predefined information meaning (col. 5 lines 1-17) that correspond to at least one of the predefined information arrangement (col. 5 lines 20-23) and a predefined information meaning (col. 5 lines 57-60 Table 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the dialogue analysis of Fratkina et al. in view of Gorin et al., into the predefined information meaning of Copperman et al., because Copperman et al. teach that this would provide information that can be found easily with the advantage of context and domain knowledge, col. 1 lines 64-65.

5. Claims 17-22, 39-44, and 61-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fratkina et al. (2001/004968) in view of Gorin et al. (6,751,591).

As to claims 17, 39, and 61, Fratkina et al teach a method of training an agent to respond to a customer communication, comprising:
annotating the compiled at least one conversation to categorize information contained therein (meta-data representation, interpreted as data representing other data, para [0045], lines 2-3);

processing the annotated at least one conversation using a machine learning engine (dialog engine, para [0047, line 1]) to populate a knowledge base (Knowledge Map, a representation of a Knowledge base, para [0047], line 3);

Fratkina et al do not teach compiling at least one exemplary conversation, where in the at least one exemplary conversation comprises an exchange of utterance.

However, Gorin et al. do teach this (dialog exchange may be stored in a database, col 1, lines 56).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to have Fratkina's knowledge base store a number of exemplary conversations like in Gorin et al. because Gorin et al. teach that this would increase understanding of the user's request by the computer can be facilitated, col. 2, lines 31-34.

As to claims 18, 40, and 62, which depend on claims 17, 39, and 61, Fratkina et al teach a method wherein annotating the compiled at least one conversation comprises:

Art Unit: 2626

presenting a user with a plurality of categories (dialog engine interacts with users to create and refine the knowledge session tags, para [0077], lines 1-2 in combination with figure 5, elements 60 and 70; and, The Dialog engine utilizes a range of interaction forms to elicit additional information from the user, para [0077], lines 2-4, and) for annotating the at least one conversation; and

associating respective one of the plurality of categories with respective parts of the at least one conversation based on user input (auto contextualization process, para [0069], lines 5).

As to claims 19, 41, and 63, which depend on claims 18, 40, and 62, Fratkina et al teach a method wherein parts of the utterances comprising the at least one conversation comprise sentences (natural language, para [0069], line 3) and words (keywords, para [0069], line 3).

As to claims 20, 42, and 64, which depend on claims 19, 41, and 63, Fratkina et al. teach a method wherein presenting the user with the plurality of categories comprises: presenting the user with a plurality of categories (Windows 95, Windows 98, or Windows 2000, para [0099], para[0100], para [0101], respectively) based on intent for annotating (identified by tags to categorize the information within, para [0114]) the sentences (How do I install Windows?, para[0097], line 5), and

- presenting the user with a plurality of categories (Disambiguating queries(DAQs), para[0109], lines 6-8 and text DAQs, para [0115] and [0116]) based on semantic content (ambiguity of words in text, para[0116], line 2) for annotating the words.

As to claims 21, 43, and 65, which depend on claims 19, 41, and 63, Fratkina et al teach a method comprising:

- verifying that all words that are determinative to the meaning of utterances comprising the at least one conversation are annotated (may not be safe to assume that correct concept tags have been extracted from the query, para [0355], lines 13-15 and whether or not the user is asked to verify the conclusions inferred by the system, para[0355], lines 27-29 interpreted as categorizing the information within the sentence).

As to claims 22, 44, and 66 which depend on claims 17, 39, and 61, Fratkina et al teach

a method wherein the at least one conversation comprises a conversation in which the agent was a participant (...asks the user some initial questions that are then passed to a dialog engine...to provide feedback to the user. The feedback may include follow-up questions..., para[0014], lines 6-13).

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

Art Unit: 2626

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Myriam Pierre whose telephone number is 571-272-7611. The examiner can normally be reached on Monday - Friday from 5:30 a.m. - 2:00p.m.

2. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

3. Information as to the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

4/10/06 MP



RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER